

Full Heat Exchanger Series

Operation & Installation Manual

ERV800ANN

ERV1000ANN

ERV1200ANN

ERV1500ANN

No.0150501669

- Please read this manual carefully before using
- Keep this operation manual for future reference

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Safety Considerations

■ Sign Definition

- ◆ Respectful user,
Thanks you for choosing and trusting Haier air conditioner! For your better reading of this manual and facilitated operation of air conditioner, we offer hereunder definitions of signs to be found in this manual:

	WARNING: serious accident in form of killing of life or heavy injury is highly possible when erroneous installation practice take place.
	CAUTION: possibly leading to serious accident.
	PROHIBITED: practice prohibited.

■ Safety Considerations

- Careful reading of this manual prior to operating Haier heat recovery ventilation device is strongly recommended.
- Please refer to this manual in case that problems or product failures occur.
- Keep this manual for future reference in case that you do not know how to fix certain operational problems.
- This device unit belongs to the “jeopardy due to proximity” device group.
- In case that any full heat exchanger is resold to any new user, this manual shall also be resold to the same.
- Prior to installation work, careful reading of the “Safety Notices” in this manual is recommended to guarantee correct practice.
- Notices listed below are divided into " ⚠ Warnings" and " ⚠ Cautions". Issues possibly leading to serious accidents in form of killing of life or heavy injury due to erroneous practices are exclusively listed in the " ⚠ Warning" column. However, issues listed in the " ⚠ Caution" column may also cause serious accidents. In all, both warnings and cautions deeply involve safety considerations and shall be strictly observed.
- Concerned installation specialists shall teach users how to correctly use and maintain the device unit after normal operation has been confirmed through test run following completion of installation.

Safety Considerations

WARNING

- Designated MP (service point) shall be asked for in case of expected installation exercise or servicing demand so that accidents in form of electric shock and fire caused by incorrect user practice can be avoided.
- Make sure that the device is installed in places where the weight of the same can be properly and adequately borne. Besides, the device must not be mounted on non-special metal structures (e.g., anti-theft wire-mesh) as such structures with non-adequate strength may cause the device to fall and cause casualty.
- Installation work shall be done in a way as in accordance with regulations guarding against typhoon and earthquake so that accidents possibly caused by tipped devices can be avoided.
- Make sure that measures are taken to deliver protection against hazards caused by snowing weather so that damages to furniture, household appliances and electric shock and fire accidents caused by outdoor air hoses blocked by snow can be avoided.
- Make sure that air discharge does not enter outdoor air inlet to cause health-threatening indoor air pollution
- Make sure that outdoor air inlet is kept at some place far from any place where inflammable gas of any kind exists. Incorrect installation may cause serious loss of indoor oxygen leading to serious accidents.
- Make sure that a dedicated power circuit is solely available for the unit, and all electric work is undertaken by competent specialists in accordance with local laws and regulations and this manual and circuit diagram.

Inadequate power supply or incorrect electric construction may cause electric shock or fire accident.

Wiring shall be done with designated cables safely connected; make sure that terminal joints

- are reliably fixed and all cables shall be insulated; external force on cables shall not transfer onto special wires that have been already used, otherwise, improper connections or fixings will cause heating-up and fire accident.

Cables shall be kept in their normal shape and fixed reliably lest upward swelling occurs; device

- case cover shall be fixed tight lest wires get clamped under cover or against exterior plate; improper connections may cause electric shock, fire accident or over-heating terminals.

Please avoid installation in such places as machining plant or chemical plant where hazardous

- or corrosive gases (e.g., acid, alkali, organic solvent and oil paint) are generated; places where inflammable gases may leak are also forbidden as these gases may cause fire accident.

CAUTION

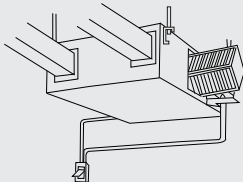
- Earth connection must be available. The absence of earth connection or incomplete earth connection may cause electric shock. Earth connection must not lead to gas pipe, tapping pipe, lightning rod or telephone line.

Safety Considerations

- Creepage breaker must be available. Creepage test must be done after devices are mounted. In case that creepage breaker is absent, electric shock may take place.
- Parts delivered together with the device or parts particularly designated by us are to be used during installation lest electric shock and fire accident occur.
- Outdoor air hoses shall be installed with proper and adequate obliquity to prevent rainwater from dripping into the device. When incorrectly mounted, rainwater may enter the building and damage furniture and cause fire and electric shock.
- Outdoor pipeline and gas supply lines shall be wrapped with heat insulant to prevent dew congealment. When incorrectly installed, dew water may drip into the building and damage furniture.
- In case that metal air hoses are put across metal wire grid, electric wire grid or metal lining of wooden wall structures, insulation protection shall be available at cross-sections. Incorrectly mounted air hoses may cause electric shock or short circuit.

Operating Considerations

Please do not independently check or repair the unit unaided by specialists. Please entrust checking or repairing to service personnel with relevant qualification certificate. Make sure that power circuit is cut off before touching any electric parts.



Before service, shut down the unit and make sure that power is shut off.



Constantly stay under the airflow from the unit harms personal health.

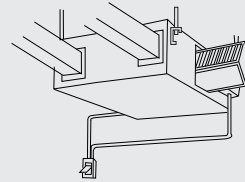


Do not use water to wash and clean the unit. Otherwise, electric shock or fire may happen.



Please use air screen.

Without air screen, heat exchanger may get blocked and fail to perform normally and finally break down.



Do not abruptly switch between operating modes. Such practice causes product failures and renders switch or relay ineffective.



Do not operate the unit with wet hands. Otherwise, you may get shocked.



In case of abnormal happenings (e.g., burning smell), shut off power immediately and contact concerned distributors to find remedy.



Safety Considerations

Do not put full heat exchanger to other uses.
Do not use full heat exchanger to keep certain precision instruments, food, animals and plants and artworks.



Do not place burning apparatus under the airflow from full heat exchanger.
Such practice may cause incomplete burning in these apparatus.



Do not allow children, plants or animals to stay directly under the air flow from the unit.
Otherwise harmful effects are done on them.



Do not place or use any kind of inflammable spray near full heat exchanger or the air inlet and outlet grille. Otherwise, fire accident may take place.



Shut off power when the unit lays idle for a long time.
Otherwise, dirt and dust may pile up and cause the unit to overheat or get on fire.



Do not block the air inlet and outlet grille.
Blocked airflow fails to travel across the building and may lead to failures.



Do not shoot any spray (pesticide, detergent, etc) at the control.
Otherwise, the control may get damaged, deformed or fail.



Please put on gloves before you wash and clean the unit.
Otherwise, you may get your hands hurt.



Do not press control buttons with hard objects.
Otherwise, the control gets damaged.
Do not operate the control with wet hands.
Otherwise, electric shock occurs.



Do not use benzene or diluent to wash and clean the case of heat exchanger.
Otherwise, the case will crack, change in color or fail.
Do not use benzene or diluent or chemical duster to wipe and clean control panel.
Otherwise it will lose color or its coating will flake off. If the control panel is much dirty, use cloth soaked in diluted detergent and then wrung dry to wipe it and finally wipe it dry with dry cloth.



Do not touch internal parts in the control.
Do not open the front plate. Danger and fault may ensue when certain parts are touched. Please contact concerned distributors to check and adjust internal parts.

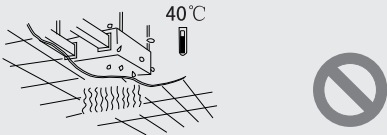
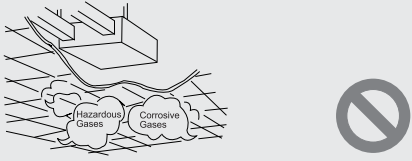
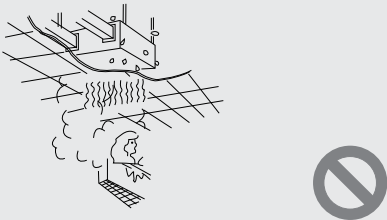
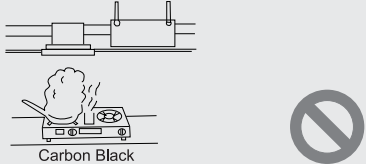


Do not set full heat exchanger on bypass operation under below-zero room temperature or above 30°C external temperature.
Otherwise congealment occurs on mainframe, outlet grille or air inlet.



Safety Considerations

■ Installing Considerations

Do not use heat recovery ventilation device or air inlet and outlet grille in places as follow.	
Make sure that air temperature close to heat recovery ventilation device or air inlet and outlet grille in places directly under burning effects of high temperature or flame source does not exceed 400C. In case of operation under high temperature, the unit will have its air screen and heat exchanger deformed or its electric motor burnt out. 	Do not operate the unit in places such as machining plant or chemical plant where hazardous or corrosive gases (acid, alkali or organic solvent and oil paint) exist; places where inflammable gases may leak shall also be avoided. Such gases may lead to fire accident. 
Do not operate the unit in humid bathroom. Otherwise, leakage or electric shock as well as other lapses may ensue. 	Places where carbon black (fume and soot) is thick shall be avoided. Otherwise carbon black (fume and soot) gathers on air screen and heat exchanger and causes them to break down. 
Places such as kitchen where steam and oil soot are thick shall be avoided. Otherwise fire accident ensues. 	Places where leakage of inflammable gases is possible shall be avoided. Otherwise poisoning or fire ensue. 
For measures available, please contact concerned distributors for detailed information.	Creepage breaker shall be mounted to prevent electric shock or fire accident. Otherwise, shock may ensue. 
Make sure that temperature and humidity in places where the unit is mounted do not exceed prescribed limit values. Cool house or other low temperature places or places near water source shall be avoided. Otherwise fire accident or short circuit ensues. 	External air hoses shall be mounted with proper and adequate obliquity to prevent rain water from dripping into the unit. Otherwise, rain water will enter the building, damage furniture and cause electric shock or fire. 

Safety Considerations

Heat insulation shall be available for exhaust hoses to prevent dew congelment (the same for intake hoses when necessary). Water will enter the building and damage furniture due to lack of heat insulation.



In case that metal air hoses are put across metal wire grid, electric wire grid or metal lining of wooden wall structures, insulation protection shall be available at cross sections. Otherwise, electric shock, short circuit and fire accident will ensue.



Control shall be mounted in places where ambient temperature falls within the 0°C - 35°C range and humidity within RH40%-80%. Otherwise, electric shock or fault ensue.

Do not install the unit unaided by specialists. Please ask concerned distributors to complete the job. In case of incomplete installation unaided by specialists, electric shock or fire accident may ensue. In case of falling off of the unit, casualty may ensue.



Installation shall be carried out according to the manual. Incorrect installation will cause electric shock or fire accident.



External air intake shall be mounted to prevent external inflammable waste gases from entering the building. Incorrect mounting of the same may cause indoor lack of oxygen leading to serious accident.



Make sure that waste gas of any kind does not enter external air inlet. Otherwise, indoor air pollution ensues and threatens personal health.



Make available an independent power supply, and entrust all electric engineering to qualified professionals in accordance with local laws and regulations. Non-standard wire circuits or erroneous practice will cause electric shock or fire accident.



All connections shall be done by expert electricians. In case of wiring arrangement, please contact concerned distributors and do not proceed with the job unaided.



Earth connection shall be confirmed available for the unit to prevent electric shock. Besides, earth connection shall not lead to gas pipe, water pipe, lightning rod or telephone line.



Install full heat exchange unit in places where the weight of the same can be properly and adequately borne. The unit may fall off weak bases to cause casualty.



Control connection shall be done in correct mode. Otherwise, electric shock or fire ensues. Do not pull at or wring out control wire. Such practice causes failures.



Safety Considerations

Do not mount control in places where water splashes.
Soaked control internal causes electric shock or internal electric part fault.



Make sure that measures are taken to guard against snowing weather.
Without effective protection, snow will enter external air hoses to damage furniture, cause electric shock and fire accident.
In case that certain gas gets checked outside the unit, fire accident may ensue.



■ Considerations for Removing, Reinstalling/Maintaining

Do not refit the device.
Electric shock or fire accident may ensue.



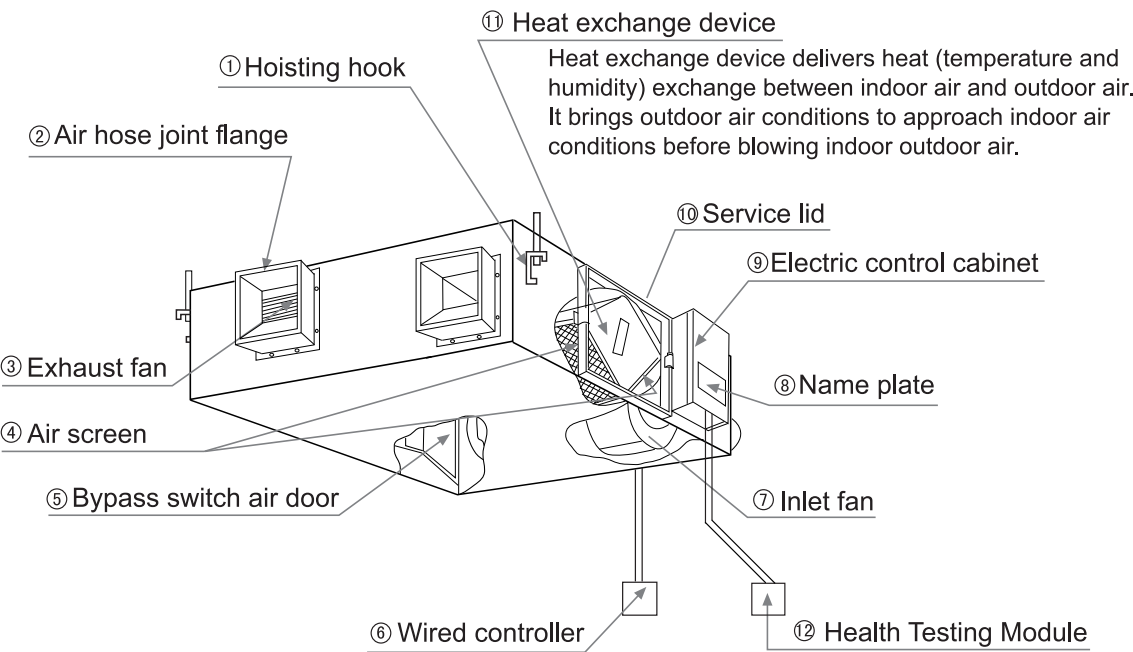
Do not overhaul the device unaided by concerned specialists.
Electric shock or fire accident may ensue.
Do not trust this job to trade agency.



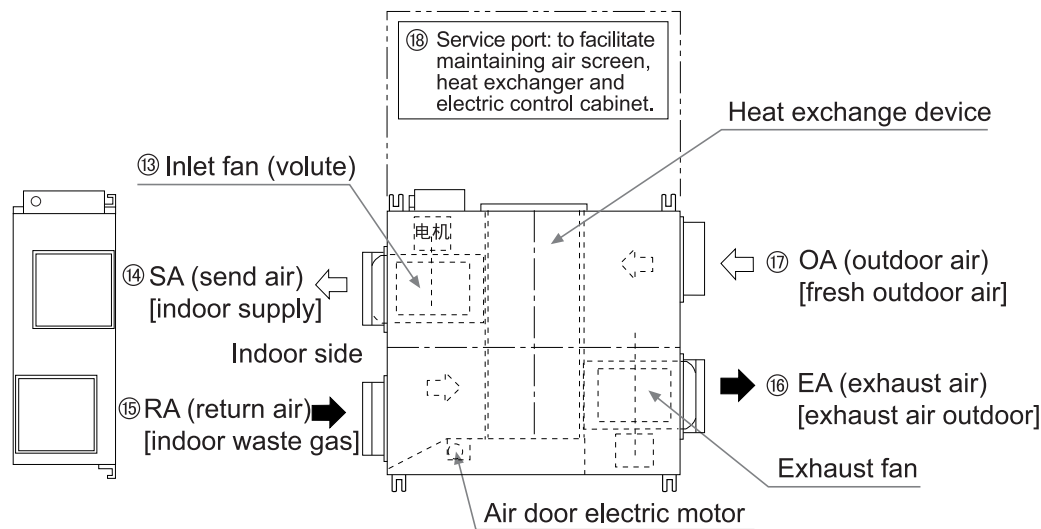
Distributors or after service network points shall be asked to remove or reset the unit.
Incomplete installation will cause water leakage, electric shock and fire accident.



Parts and Functions



CAUTION
Conspicuous but innocuous smell may ensue during first run of the unit. The smell will disappear as the unit is more frequently operated.



Parts and Functions

Control Button and Display Definition

Air Quality Indicator

Indicates air quality status monitored by health module via communication signals from full heat exchanger

Air Quality "GOOD": ☺

Air Quality "BAD": ▼L☺

Air Quality "EXCELLENT": ☺▲H

Air Speed Button

Air volume changes in cycle below when the button is pressed upon starting the unit:



Operating Mode Button

Operating mode changes in order below each time the button is pressed:



Time button

Clock and Time Setting

Setting Button

For clock setting and timing

Time Setting Button

For selecting timing mode:
Timed Start, Timed Shutdown, Untimed

Lock Button

For locking in buttons and content on LCD

Health Button

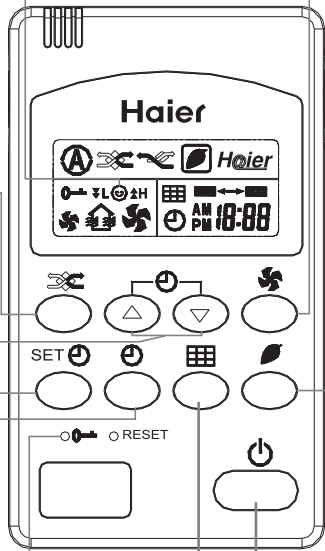
Under start-up and shutdown conditions, wire control sends health signal to full heat exchanger when the button is pressed, and full heat exchanger enters health mode upon receiving signal; at the same time, wire control indicates health status. Health mode is cancelled when the unit is shut down.

ON/OFF Button

Press the button once to start up and twice to shut down. The cycle goes on.

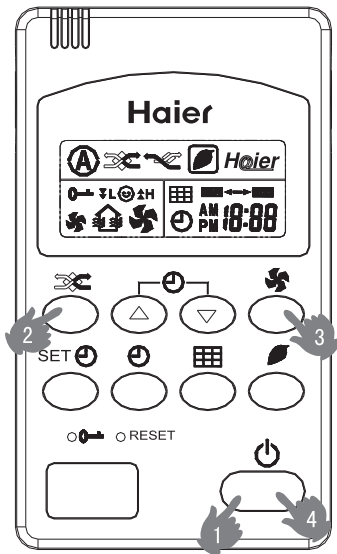
Screen Clean-up Button

When the system runs for 500 hours in total (operating hours reduced by half under bypass operating mode), wire control registers for screen cleanup and screen indicator flashes. After screen gets cleaned up and reinstalled, press screen clean-up button so that the system runs normally.



Operation instruction

■ Auto/Heat Exchange/Bypass



1. Startup

Press ON/OFF button. Wire control indicates previous operating status and operating indicator flashes on wire control.

2. Operating Mode Selection

Press mode button to change operating mode:



Select one of the three modes.

Under (heat exchange) mode, air ventilation [heat exchange] is delivered through heat exchange components;

Under (bypass) mode, [bypass] ventilation is delivered through bypass air flow, not heat exchange components;

Under (auto) mode, operating mode automatically switches between [heat exchange] mode and [bypass] mode through temperature sensor.

3. Air Speed Tuning

Press air speed button to change air speed:

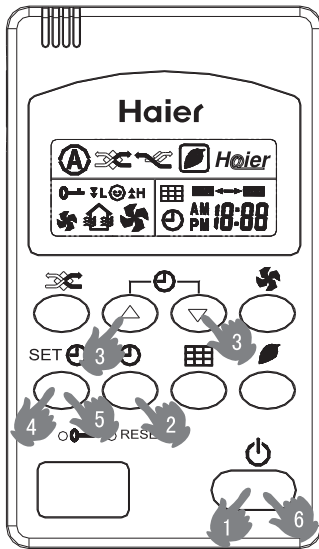


Select Reasonable Air Speed.

4.Shutdown: press ON/OFF button

Operation instruction

■ Timing



1. Select an operating mode after startup.

Corresponding mode indicator flashes on wire control.

2. ON/OFF Timing

Press timing button to select timed startup or timed shutdown. Timing mode changes each time the button is pressed in cycle below:

Timed Startup → Timed Shutdown → Untimed

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graph LR; A[Timed Startup] --> B[Timed Shutdown]; B --> C[Untimed]; C --> A;
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3. Timing

With wire control in timed status, timed startup indicator flashes or timed shutdown indicator flashes, then press time tuning button.

Each time "▲" button is pressed, timing is prolonged by 10 minutes.

Each time "▼" button is pressed, timing is shortened by 10 minutes.

Timing tuning is free within the 24-hour range.

4. Confirmation

After time tuning is done, press setting button to confirm.

Timing indicator constantly shines on wire control.

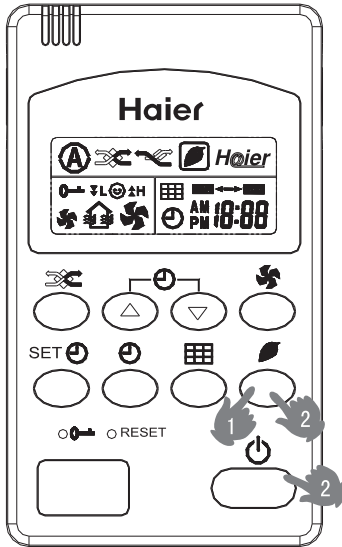
5. Cancellation

When timing indicator constantly shines, press setting button; timing indicator turns off; timing is cancelled.

6. Shutdown: press ON/OFF button

Operation instruction

Health Module Function



1. Health Mode Settings

Press health button once for full heat exchanger to enter health mode.

In case of abnormal air quality signal under health mode (BAD or GOOD) , the device keeps running in initial operating mode when wire control starts up.

In case of normal air quality signal (EXCELLENT), the unit keeps running in current operating mode. When wire control shuts down, health mode turns off and full heat exchanger receives shutdown signal.

In case of abnormal air quality signal under health mode (BAD or GOOD) , idle wire control switches to “Startup, Auto, High Blast” status until air quality turns Excellent before wire control automatically shuts down.

2. Cancellation

When under health mode, press again health button or press once ON/OFF button when the unit is ON to exit health mode.

Note: Health button remains active when the unit is OFF.

Special Functions

Power-down Memory

Power-down memory has been defaulted upon leaving factory.

Activating: when the unit is ON, continuously press screen clean-up button 10 times in 5 seconds; buzzer continuously rings 4 times; power-down memory is activated;

Cancelling: when the unit is ON, continuously press screen clean-up button 10 times in 5 seconds; buzzer continuously rings 2 times; power-down memory is cancelled.

Note:

Other functions except mode functions can only be set through wire control matched with full heat exchanger.

Maintenance

Only service personnel with qualification certificate can undertake service work.

WARNING

- All power circuits shall be cut off before connecting terminal devices.
- Shut down the device and shut off power switch before washing or maintaining; otherwise, electric shock may ensue; do not touch movable and rotary parts.
- Do not wash the device with clean water; otherwise, electric shock ensues.

When wire control registers for screen cleanup and screen indicator flashes (cleanup time reached), clean up air screen. The indication appears when preset runtime comes to an end.

CAUTION

- Heat exchange device and air screen shall be frequently cleaned up and replaced.
- Cleanup job shall be done at least one time per year (applicable to normal office conditions). (Frequent cleanup shall be done when necessary)
- In case of serious air pollution in places where the unit is installed, intensify cleanup efforts.
- In case of dust and dirt stubbornly denying cleanup efforts, replace air screen and heat exchange device (all replacements shall be alternative fittings).
- Please wear gloves when conducting cleanup job lest injury ensues.
- Mind your steps especially when working aloft.

CAUTION

- Do not wash air screen with water hotter than 400C; otherwise, screen may lose color or get deformed.
- Do not place air screen near fire source; otherwise, screen may catch fire.
- Do not use gasoline, diluent or other chemical solvents; otherwise, screen may lose color or get deformed.
- Do not remove air screen except for cleaning purposes; otherwise, fault may ensue.

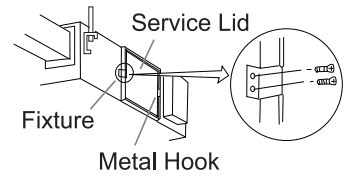
WARNING

In case that handle of heat exchange device gets damaged during cleaning, please replace heat exchange device; otherwise, it may fall off.

Maintenance

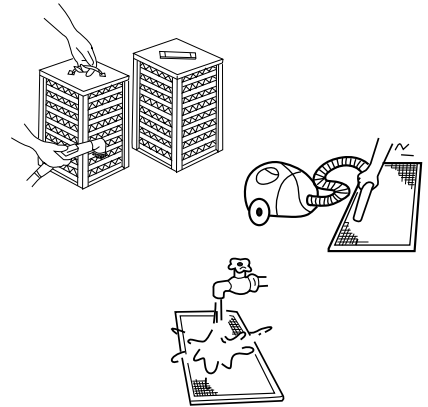
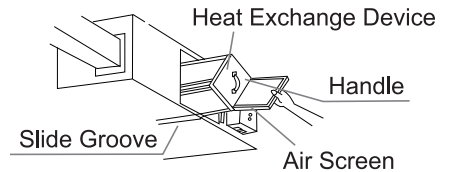
1. Removing Service Lid

Remove metal hook on service lid fixed onto ceiling through service port and then dismantle service lid.



2. Pull out air screen and then two heat exchange devices. Air screen and heat exchange devices shall be separately cleaned as follows:

- **Cleaning Heat Exchange Device**
Clean dust and impurities off devices with vacuum cleaner. Brush shall be available for the suction port of the vacuum cleaner. Lightly and carefully brush heat exchange devices; rough contact may cause damages. (Do not clean devices with water. In case of seriously dirty air screen, please ask for professional cleaning from concerned distributors.)
- **Cleaning Air Screen**
Clean air screen with vacuum cleaner or water. In case of extremely dirty screen, clean with soft hairbrush and neutral detergent. After cleaning, air-dry air screen.



3. Installing Air Screen

After cleaning, swing water out of air screen, and then, air-dry it in cool places for 20-30 minutes. When it is thoroughly dry, put it back. Fix air screen tight in the right place.

4. Push heat exchange devices back into bracket and insert them tight in the bracket.

5. Mount service lid tight in the right place.

As for control displaying a sign of screen, connect the control to power after service and press Screen Cleanup button to restart the device.

Please contact concerned distributors when you want to change the time for sending screen cleaning signals.

Installing Full Heat Exchanger

■ Installation Procedures

◆ Do not install the unit in:

- Places close to high temperature locations or naked fires; otherwise, fire accident or overheating may occur.
- Places where oil mist or gasoline exists, such as kitchen; otherwise, fire may occur.
- Places where poisonous gases or corrosive material (acid and alkali solvents) are to be found, such as machine shop and chemical plant. Places where leakage of inflammable gases is possible shall also be avoided.
- Places with high humidity, such as bathroom, where electric shock or creepage and other troubles may take place.
- Places close to machines sending out electromagnetic waves, which may interrupt the operation of control system and cause failure.

CAUTION:

Please make sure that temperature and humidity in places where air inlet and outlet grille is installed are controlled within prescribed range under operating conditions. Do not install the grille in refrigerator vehicle, low temperature places or warm water swimming pool; otherwise, short circuit or fire may ensue. Vehicles or vessels shall also be avoided.

◆ Preparation Prior to Installation

Accessories and fittings necessary for installation shall be kept and must not be discarded!

1. Transporting the Unit

- Decide on transporting route and do not unpack before arriving at installation site.
- When unpacking is compulsory, please use soft rope or adopt the “rope plus angle of protection” approach to lifting devices so that scuffing or damages can be avoided.
- When moving unpacked units, lift the unit by hoist hook, and not by any other objects on the unit (air hose joints in particular).

CAUTION:

Concerned specialists shall teach users how to correctly operate the unit with aid from the manual (especially air screen service and operation procedures).

2. Accessories: Other parts not shown below shall be prepared by users.

Designation	Lace	Manual
Number	1	1
Appearance		

3. Special attention shall be given to following issues during installation and following completion of the same

a. Check upon Construction Completion

Installing Full Heat Exchanger

Item	Possible Consequences due to Erroneous Practices	Results
Unit fixed tight?	Device may fall off, vibrate, or make noises.	
External air hoses tilted downwards and leading outdoor?	Condensed water may enter.	
Adequate heat insulation available for the unit? Valuables placed under air outlet frame?	Heat exchange efficiency may be impaired, and condensed water may occur; in case that condensed water dripping onto valuables, damages may occur.	
Supply voltage conforms to rating on name plate?	Fault may ensue or parts may get burnt out.	
Correct wiring?	Fault may ensue or parts may get burnt out.	
Safe earth connection?	Danger of creepage is possible.	
Air inlet port and outlet port blocked by objects?	Possibly leading to incomplete ventilation or abnormal running noises.	

b. Operating Instruction Essentials

⚠WARNING, ⚠CAUTION and ⚠PROHIBITED in the manual are indications of possible bodily injury and damages to devices, therefore, contents thereof shall be explained to users who shall be asked to read the manual.

Please check against items in “Safety Considerations” again.

◆ When moving or unpacking the unit, please hold the hoist hook.

Do not apply force to other parts, joint flange in particular. Please improve heat insulation when temperature and humidity inside ceiling exceed 30°C and RH80%. Glass wool or polyethylene foam shall be used to deliver heat insulation so that insulation thickness does not exceed 10mm, which is fit for the opening space on ceiling.

1. Choose installation site according to installing conditions and users' requirements.

The unit shall be installed in places featuring adequate strength and stability (e.g., crossbeam, ceiling, and other locations capable of bearing unit weight. Insufficient strength is dangerous and may cause vibration and abnormal operating noise).

Do not install the unit directly unto ceiling and wall surface; direct contact may cause vibration. Install the unit in places where cleaning and service are facilitated.

CAUTION

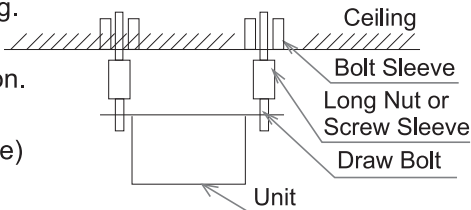
- The unit, power lines and wires shall be kept at least 1 meter away from TV sets and radios to prevent interruption and noise. Placing of valuables right under the unit is strictly prohibited to prevent condensed water from dripping onto valuables and causing damages.
- Air chest may not be used in certain regions; please consult local authorities and fire department.
- In case that fireproof material is required in certain buildings, common air hose shall be supported with copper tube to exhaust air.

Installing Full Heat Exchanger

2. Install the unit by hoist hook and check out whether ceiling is strong enough to hold the unit. In case of insufficient strength, reinforce ceiling prior to installation.
Note: All above parts shall be procured in local region.

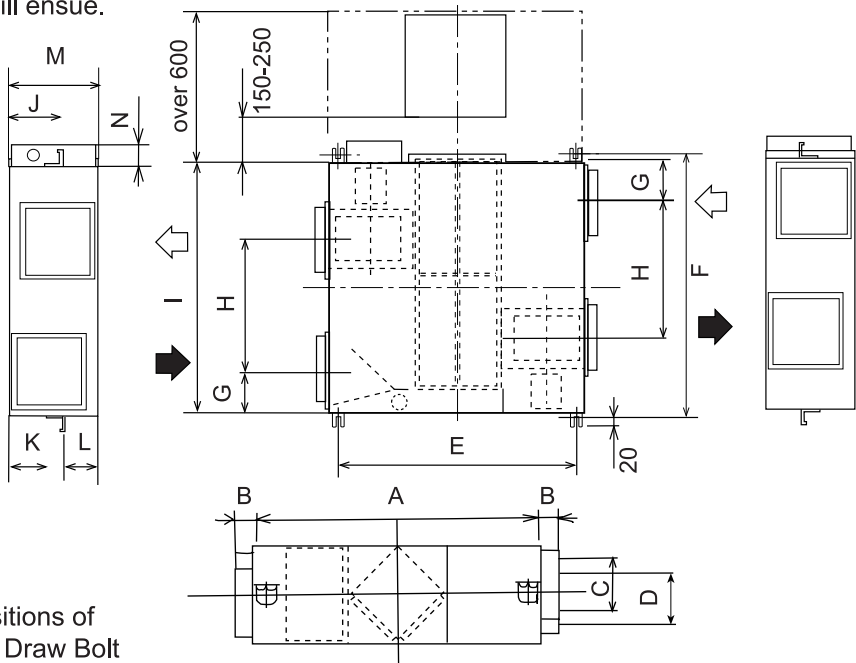
◆ Preparation Prior to Installation

- 1. Decide on the relative positions of the unit and hoist hook. (Refer to installation diagram)
Set aside service space, including service port (open a service port beside electrical cabinet on the ceiling to facilitate checking and maintaining of air screen, heat exchange device and fan).
- 2. Make sure that external static pressure does not exceed range limits.
- 3. Opening installing port: put signal transmission line and wire control cable through the line hole on the unit after opening installing port on the ceiling.
- 4. Keep ceiling in level position after opening installing port; reinforce ceiling when necessary to prevent vibration. (Concerned architect or carpenter can be consulted).
- 5. Installing Draw Bolt (Choose from the M10-M12 Range)



◆ Installation Position

- Please install in places capable of bearing unit weight. Improper installation is dangerous; it not only causes vibration but produces operating noises.
- Set aside service space and access hole. Please make sure that access hole is preset to check air screen, heat exchange device and fan.
- Do not install the unit directly on roof or wall; otherwise, the unit may directly touch roof or vibration will ensue.

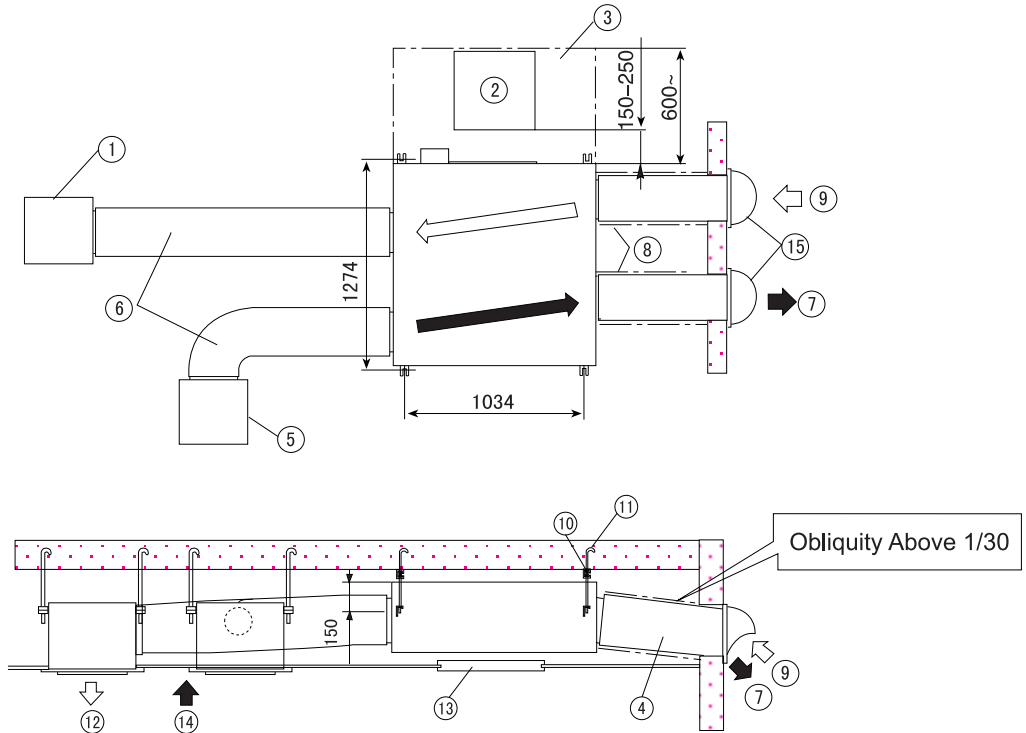


Relative Positions of the Unit and Draw Bolt

A	B	C	D	E	F	G	H	I	J	K	L	M	N
1110	24	235	235	1034	1274	153	622	1216	235	235	155	385	66

Installing Full Heat Exchanger

◆ Installation Diagram



1.Outlet Grille---Available on the Site

2.Service Lid

3.Service Space for Maintaining Heat Exchange Device, Air Screen, Control Box and Fan.

4.Air Hose (available on the site)

5.Inlet Grille (available on the site)

6.Air Hose or Bourdon Tube (available on the site)

7.EA (exhaust air)

8.Heat Insulant—available on the site

9.OA (outdoor air: fresh outdoor air)

10.Suspending Rack to Reduce Vibration (available on the site)

11.Suspending Bolt (available on the site)

12.SA (sending air)

13.Service Lid (dia.450mm) (available on the site)

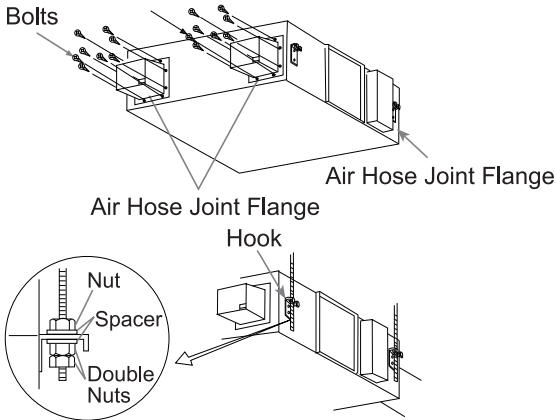
14.RA (return air)

15.Dome Shield (available on the site)

<Air Hose Installation Essentials>

- Silencing box and soft hose are recommended when installing the unit in quiet places.
- Airflow volume and noise rating shall be considered for special places when choosing installing material.
- Temperature inside ceiling rises when outdoor air enters ceiling; therefore, heat insulation properties shall be delivered to metal parts.

Installing Full Heat Exchanger



Installing Heat Recovery Ventilation Device
 Fix anchor bolts (M10-M12) in the first place, then, put metal suspending rack through anchor bolts and fix it with spacer and nut.
 (Check against residual scraps of vinyl foam and paper inside fan chest; check air hose inside through hose holes.)
 When installed aloft, inverted suspension of the unit is needed; please take care to fix the unit tight with long foot bolts.

Connecting air hose: when connecting air hose, remember:

a. Do not connect air hose as shown by diagram on the right
 Ex.1: Avoid overbending, e.g., bend angle above 90°.

Ex.2: Avoid multiple bending.

Ex.3: Avoid reduced hose diameter, E.g., reduced mid-section diameter prohibited.

Ex.4: Avoid bending close to outlet.

b. Air Hose Minimum Bend Radius:

Dia.100mm Hose: 100mm; Dia.150mm Hose: 150mm;

Dia.200mm Hose: 300mm; Dia.250mm Hose: 375mm

c. To prevent air leakage, joint section between flange and air hose shall be wrapped with aluminum foil.

d. To prevent short circuit, indoor air inlet shall be installed as far away from air outlet as possible.

e. Please choose air hoses with specs conforming to unit model.

f. Install two external air hoses with regular obliquity (not below 1/30) to prevent rain water from back-flowing. At the same time, heat insulant shall be available for all three air hoses (two outdoor and one indoor) lest condensed water ensues. (Insulant material: glass wool 25mm thick)
 (Refer to diagram on the right)

g. In case of constant high temperature and humidity in suspended ceiling, install ventilation device in ceiling.

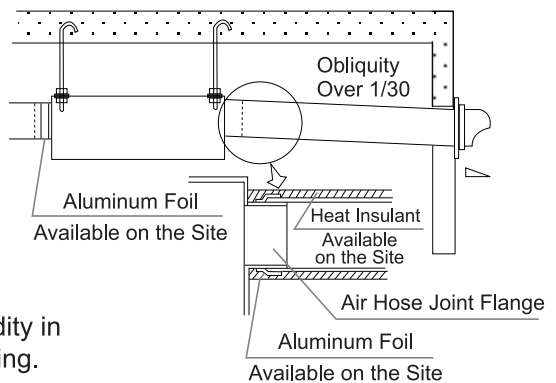
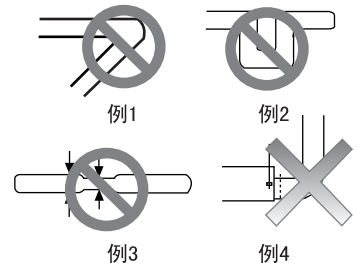
h. Soft hose and wind softening hose can effectively reduce exhaust noises.

Fan strength and operating noise shall be considered when choosing material. Distributors of Haier products shall be entrusted to choose material.

i. Default distance between air outlet EA and air inlet OA shall be two times longer than hose diameter.

j. Do not use bent service lid or dome shield as external shield; otherwise, rain water will directly enter. (Deepened shield is recommended)

k. Make sure that air hose is at least 1 meter away from shield.

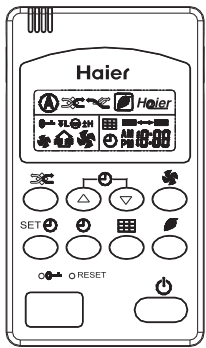


Installing Full Heat Exchanger

◆ Installing Wire Control

1. Removing Top Cover

Install PC plate on the top cover of wire control.
Take care not to damage PC plate while removing top cover.



2. Indoor Unit Connection

Connect terminals (A, B, C) on bottom of wire control to terminals (+12V,GND,S)on indoor PC panel.

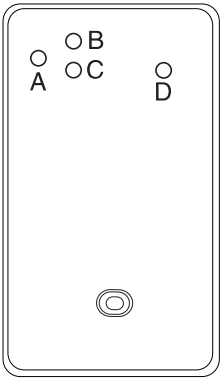
CAUTION:
While conducting connection, keep certain distance (over 10mm) between signal line and power line.

Size of Signal Line:

Type	Shield Line (three cores)
Size	0.33mm ²

CAUTION:
Make sure that terminal joints have been connected tight and no short circuit exists between terminals.

Wire Control Circuit Board

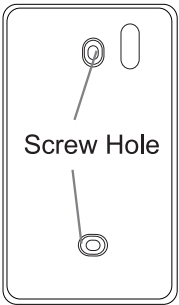


3. Installing Wire Control

Bore two holes on wall according to the positions of two screw holes on the back cover of wire control; fix back cover with bolts and close front cover.

CAUTION:
Fix back cover on even wall surface, and do not apply too much force when screwing down bolts lest wire control is damaged.

Back Cover



4. Close top cover and take care not to press on wire.

CAUTION:
Do not touch PCB panel with hands

Installing Full Heat Exchanger

Health Testing Module: Definition & Installation

◆ Defining Health Testing Module

Health testing module, as an optional component of full heat exchanger, matches full heat exchanger to form health module.

Health testing module is available in two specification models, AS-C and AS-I, applied to indoor air quality testing and joint control of indoor air quality with full heat exchanger. Carbon dioxide sensor is available with the AS-C model for precise testing of indoor CO₂ concentration.

◆ Installing Health Testing Module

1. Fixing secure health testing module.

(NOTE: when fixing the module with open wire, wood panel 2-3mm thick shall be padded against shell back to prevent module shell from tilting as a result of wiring movements).

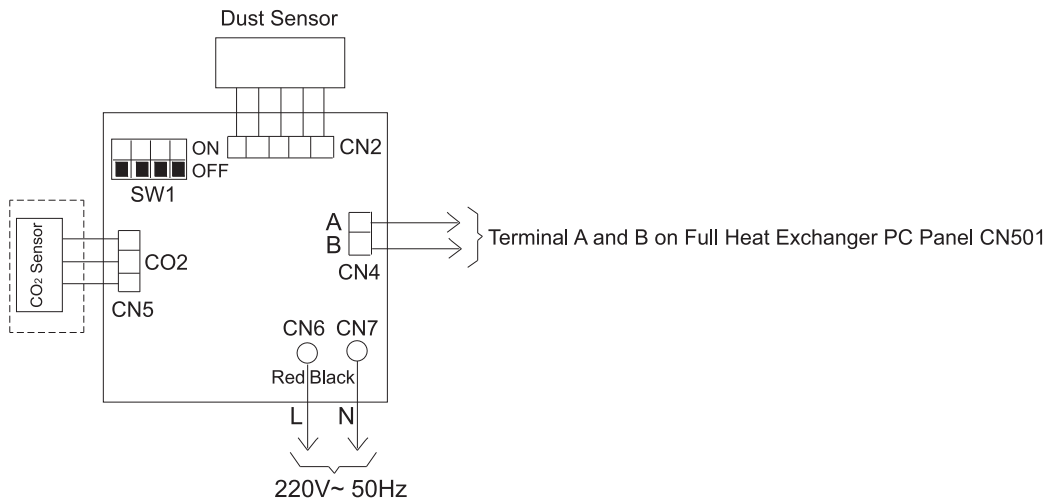
2. Connect the red and black lines on health testing module to power, red line to live wire and black line to null wire.

Wire Gauge: 2X (0.75-1.5mm²)

3. CN4 terminal A and B is connected via signal line to CN501 terminal A and B on full heat exchanger PC panel.

2X (0.75-1.5mm²) shield line is available as signal line.

4. Health testing module circuit diagram as follows:

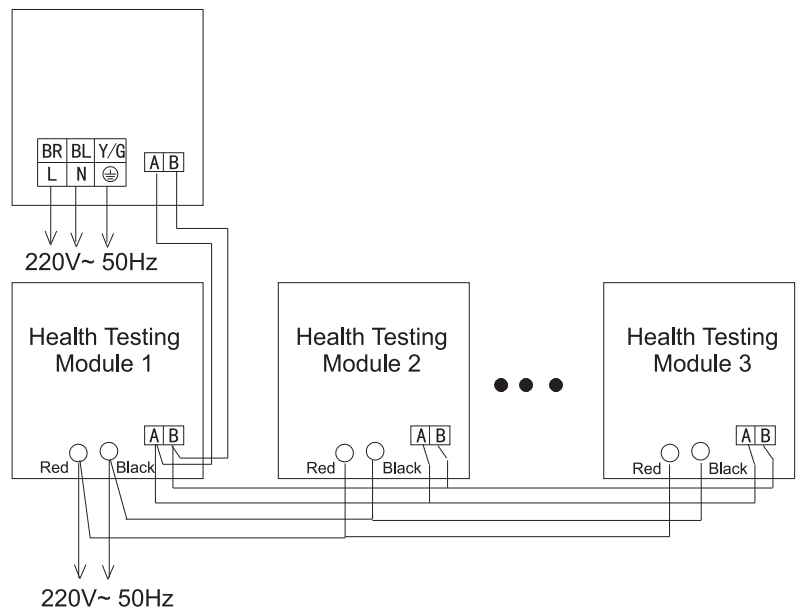


Note:

SW1 is used to set testing module address.

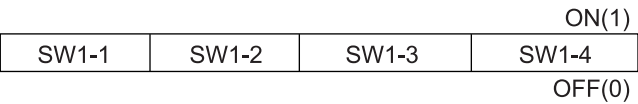
Installing Full Heat Exchanger

5. Health Testing Module Wiring Diagram



NOTE:
R5485 communication is available with full heat exchanger and health testing module. One single full heat exchanger can connect to multiple health testing modules, 8 at most. Every health testing module must have its address preset with 1 as the initial value.

Setting Health Testing Module PC Panel Address
PC panel has its address preset with quadbit dial codes. Dial codes are arranged on PC panel as shown in diagram below:



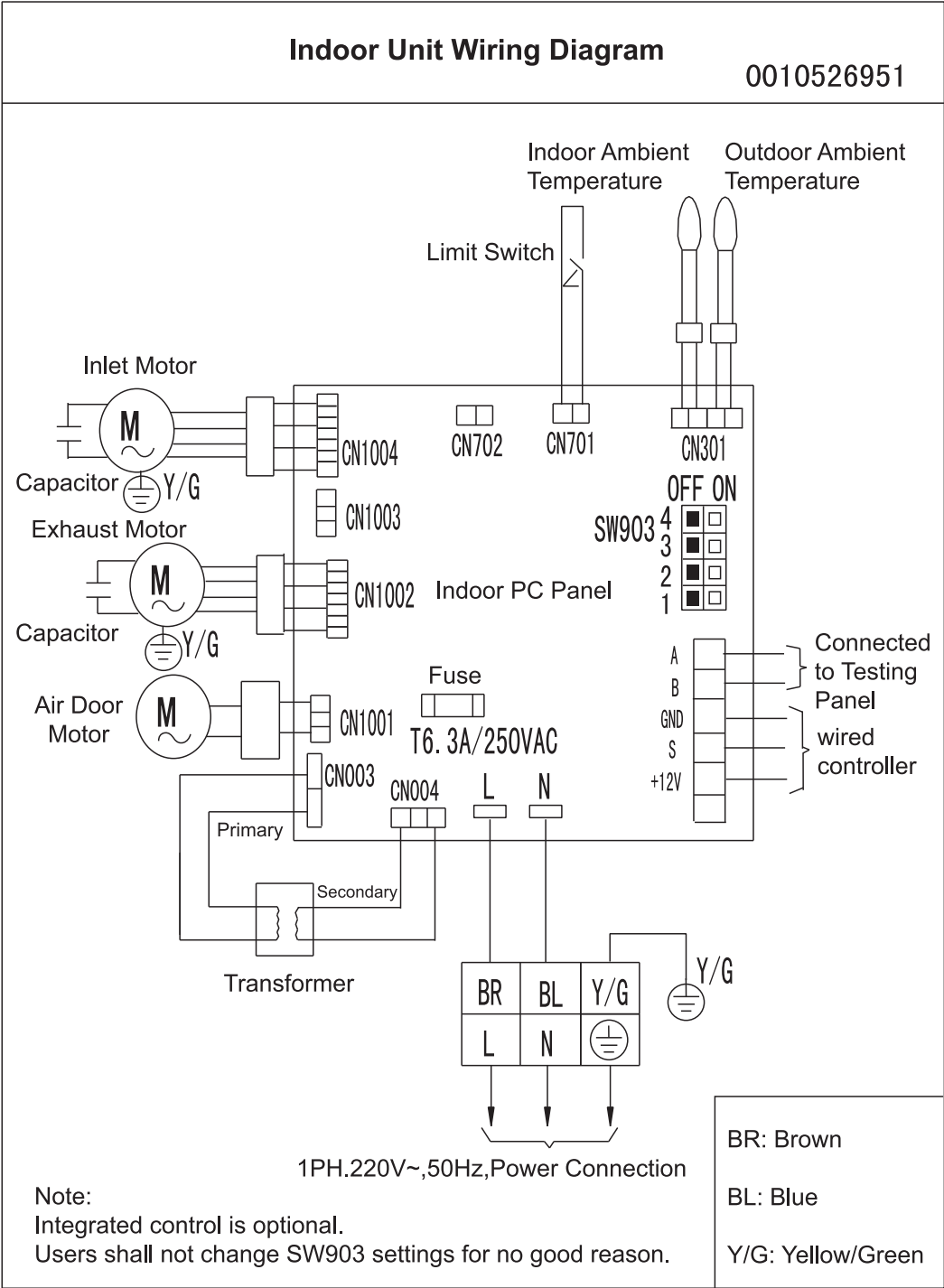
Dial codes settings correspond to addresses as follows (1 as ON, 0 as OFF):

SW1-1	SW1-2	SW1-3	SW1-4	Setting Address
0	0	0	0	1
1	0	0	0	2
0	1	0	0	3
1	1	0	0	4
0	0	1	0	5
1	0	1	0	6
0	1	1	0	7
1	1	1	0	8

Set SW1-4 to 0

Installing Full Heat Exchanger

6.Full Heat Exchanger Wiring Diagram:



Installing Full Heat Exchanger

Defining Electric Control System

Air Mode Switch: (delivered only through wire control matched with full heat exchanger)

Airflow volume can switch between “high speed” mode and “low speed” mode, “high air change” mode and “low air change” mode.

Switch to Outdoor Fresh Air Mode:

When the unit operates in “high speed” mode and “low speed” mode, air coming indoors and air coming outdoors have the same flow volume.

Air change mode is available in two scenarios as follow:

- Air volume coming indoors greater that air volume coming outdoors:
PC Panel Dial Code (SW903) Settings Shown as Below:

	1	2	3	4
ON	☐	☐	☐	☐
OFF	☒	☒	☒	☒

SW903

Unit operates in “high air change” mode or “low air change” mode and air volume coming indoors is greater than air volume coming outdoors. This mode prevents humidity or unpleasant smell from coming indoors out of lavatory or kitchen.

- Air volume coming outdoors greater than air volume coming indoors:
PC Panel Dial Code (SW903) Settings Shown as Below:

	1	2	3	4
ON	☒	☐	☐	☐
OFF	☐	☒	☒	☒

SW903

Unit operates in “high air change” mode or “low air change” mode, and air volume coming outdoors is greater than air volume coming indoors. This mode stops unusual smell or air-borne bacteria from coming to hall out of sickroom.

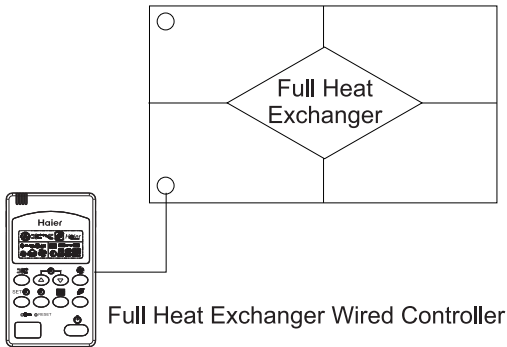
Defining Control System:

- Control operating full heat exchanger with wire control.
- Operating status and parameter settings are displayed in wire control.

Independent System:

Controlled independently through wire control:

- Users shall procure control cable (500m long at most).
- For detailed operating instruction, refer to Wire Control Operation.



Installing Full Heat Exchanger

■ Power Connection Definition

1. Wiring Notice-----Shut off Power Prior to Whatever Job.

- Circuit breaker capable of shutting power off the whole system shall be installed. Please make sure that earth connection is available.
- A switch and fuse shall be available for every single power line.
- Circuit or creepage breaker shall be available for whatever wiring job.
- Make sure that ground impedance does not exceed 100 ohms. When creepage breaker is available, ground impedor can be used to accommodate impedance over 500 ohms.
- Power line, connection line, air switch shall be prepared by users.
- Power line model: YZW power line; size must meet local criteria.
- Connection wire: Must adopt the dual-core shielded wire with sleeve. Specification:0.75~1.25mm².
- Fuse Spec: 15A.
- Power lines of different specs shall not be connected to the same terminal. Overheating will ensue in case of loose terminal connection.
- Power lines of different specs shall not be connected to the same ground terminal. Protection will be impaired in case of loose connection.
- In case of multiple power connections, please use 2mm² power lines.
- Keep certain distance between power lines and other connection cables to prevent noise.
- For wiring method, refer to circuit diagram. Wiring notice: every cable shall be connected to its corresponding terminal according to its unique polarity, and shall have its sign matched up with terminal sign.

2. Open and Close Electrical Cabinet

- Before opening the cabinet cover, make sure that power connections to unit components are shut off.
- Unscrew bolts fixing the cover and open the cabinet.
- Fix power line with clamp and make sure that earth connection is available.
- Connect control and signal lines to corresponding terminal blocks (Refer to the figure of terminal block function and the wiring diagram on the electric control box).
- Please use shield wire as signal line.
- Upon completing wiring job, please mount the cabinet cover in good manner.

Installing Full Heat Exchanger

■ Failure Definition

1. Failures and Remedies

Check against following symptoms in case that unit does not run normal.

Symptoms	Causes	Remedies
Total Breakdown	Power devices fail?	Restart after service
	Fuse burnt out or breaker cut off?	Replace fuse or reset breaker
	Standby indicator activated?	The unit is right in the prewarming or precooling process prior to running status (refer to Wire Control Button Definition).
Low Air Displacement and High Noise Level.	Filter or heat exchange components blocked?	Refer to "Maintenance"
High Air Displacement and High Noise Level.	Filter or heat exchange components installed in prescribed positions?	Refer to "Maintenance"

2. In case that any of the following failures occur, please take measures below in the first place and then contact concerned distributors.

When unusual conditions (e.g., burnt smell) happen to heat exchanger, please immediately shut off power and contact concerned distributors.

Under such conditions, continued operation may lead to failure, electric shock and fire accident.

When safety devices, such as fuse, breaker or creepage breaker, frequently jump off, or switch can not work as usual, do not turn on power.

Remedy: Keep Power Off

When control buttons fail, turn off main power switch.

3. Full Heat Exchanger Failure Codes:(indicated only on wired controller matched with full heat exchanger)

When failure codes below is indicated on wired controller, please immediately stop operation, shut off manual power switch and contact concerned distributors or contact after service staff according to warranty.

Name	Code	Definition
Indoor Ambient Temperature Sensor Failure	E1	Indoor ambient temperature sensor fails
Outdoor Ambient Temperature Sensor Failure	E2	Outdoor ambient temperature sensor fails
Limit Switch 1 Failure	E3	Air door adjustor 1 or relevant parts fail
Wired Controller and PC Panel Communication Failure	E8	Communication connections improper or control wire control, PC panel damaged

CAUTION:Service job shall be undertaken by specialists. In case of other failures, please stop operation and inform concerned distributors.

Debugging Prior to Operation:

Recheck after completing all installation work. While rechecking, refer to page 13 and all installing notices in this manual. In case of any inconsistency, please make immediate correction. Fill out Installation Service Confirmation Card after normal operation is confirmed. The manual shall be kept carefully by users.

Before operating the unit, users shall carefully read the manual; when the unit is to be resold to other new users, please transfer novice and manual to new users to facilitate future service.

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